

What is claimed is:

1. A method for producing a vaccine which establishes resistance to *F. necrophorum* bacteria in bovines immunized with said vaccine and substantially prevents pathogenic manifestations of the bacteria, such as foot rot and liver abscesses, comprising:
  - a) growing an isolate of *F. necrophorum* bacteria isolated from a bovine in a suitable growth medium for a period of time equal to between about 10 hours and about 18 hours to form an *F. necrophorum* bacteria culture, with said bacterial culture having a bacterial count population equal to at least  $1 \times 10^5$  CFU/mL; and
  - b) terminating growth of said bacteria culture, thereby forming said vaccine.
2. The method of Claim 1, wherein said method comprises mixing said vaccine with an amount of diluent to form a vaccine inoculum.
3. The method of Claim 2, wherein said diluent is selected from the group consisting of filler, adjuvant and combinations thereof.
4. The method of Claim 3, wherein said adjuvant is mixed with said vaccine in amount equal to between 18% and 24% by volume of said vaccine.
5. The method of Claim 4, wherein said adjuvant is selected from the group consisting of oils, aluminum salts, polymers, dimethyldodecylammonium bromide, poxvirus proteins, block co-polymers, triterpenoid glycosides, detergents and combinations thereof.
6. The method of Claim 5, wherein said oil adjuvant is selected from the group consisting of mineral oils, vegetable oils, animal oils and combinations thereof.
7. The method of Claim 4, wherein said adjuvant is a Suprlmm<sup>®</sup> oil.
8. The method of Claim 1, wherein said *F. necrophorum* bacteria are grown at a temperature ranging between about 33 °C and about 40 °C.
9. The method of Claim 1, wherein Step (b) is accomplished by adding an amount of formaldehyde sufficient to terminate growth of said bacteria culture.
10. The method of Claim 1, wherein said *F. necrophorum* bacteria is a biotype A (FNN) strain.

11. The method of Claim 9, wherein said formaldehyde solution is added in an amount equal to about 0.4% by volume of said bacteria culture.
12. The method of Claim 1, wherein said bacteria is grown for a period of time equal to between 11 hours and 14 hours.
13. The method of Claim 1, wherein said bacteria culture has a bacterial count population equal to at least  $1 \times 10^8$  CFU/mL.
14. A method of producing a vaccine inoculum for immunizing bovines against a biotype A (FNN) *F. necrophorum* bacterial infection, comprising the steps of isolating a biotype A *F. necrophorum* bacteria from a bovine species member, growing successive generations of said *F. necrophorum* bacteria anaerobically in a broth comprised of brain-heart infusion broth growth medium at a temperature ranging between about 35 °C and about 38 °C for a period of time equal to between about 11 hours and about 14 hours until an optical bacterial cell density equivalent to 0.8 at 540 nm and a volume of at least  $1 \times 10^5$  CFU/mL is reached, inactivating said bacterial culture by adding to said bacteria culture a formaldehyde solution to form a whole cell harvested bacteria culture, adding to said harvested whole-cell bacterial culture an amount of diluent comprised of an oil-based adjuvant, with said oil based adjuvant added in an amount equal to between 18% and about 24% by volume of said harvested bacterial culture to form said vaccine inoculum.
15. A vaccine for establishing resistance to *F. necrophorum* bacteria in bovines, when members of the bovine species are inoculated with said vaccine, wherein said vaccine comprises, a whole cell culture of *F. necrophorum*, with said culture derived from an isolate taken from a bovine species, with growth of said culture terminated and a last generation of said culture grown for a period of time equal to between about 10 hours and about 18 hours and a time sufficient for said culture to have a CFU count equal to at least  $1 \times 10^5$  CFU/mL.
16. The vaccine of Claim 15, wherein said vaccine is further comprised of an amount of adjuvant added to said whole cell culture in an amount equal to between 18% and 24% by weight of said whole cell culture.
17. The vaccine of Claim 16, wherein said adjuvant is an oil based adjuvant.

18. A method of preventing foot rot and liver abscesses in bovines caused by infection with *F. necrophorum* bacteria, wherein said method is comprised of:
- a) growing an isolate of *F. necrophorum* bacteria, taken from a bovine species, for successive generations in a suitable growth medium for a period of time equal to between 10 hours and 18 hours to form an *F. necrophorum* bacteria whole cell culture, with said bacteria culture having a bacterial count population equal to at least  $1 \times 10^5$  CFU/mL;
  - b) forming a vaccine by combining said bacteria culture with an amount of diluent; and
  - c) administering at least one dosage of said vaccine intramuscularly or subcutaneously to a bovine subject, with said dosage equal to between 1 and 5 mL.
19. The method of Claim 18, wherein two dosages of said vaccine are administered.
20. A vaccine comprised of:
- a) a killed biotype A (FNN) *F. necrophorum* isolate taken from a bovine species member of identified as ATCC Accession No. \_\_\_\_; and
  - b) a suitable carrier for said isolate.